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**A SYSTEMATIC ANALYSIS OF THE ANATOMICAL PROJECTION FROM
THE VMH TO THE dMCG USING HRP HISTOCHEMISTRY:
COMPARISON BETWEEN MALE AND FEMALE RATS**

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Anatomical as well as behavioral results indicate that the dorsal Midbrain Central Gray (dMCG) and the Ventral Medial Nucleus of the Hypothalamus (VMH) are the principle brain structures that function in mediating sexual behavior in the female rat. Recently, the medial portion of the Zona Incerta (mZI) has been implicated as an additional brain structure that regulates sexual receptivity (lordosis) in the female rat. When the mZI of the female rat was destroyed via intracerebral injections using the neurotoxin, ibotenic acid, Dornan, et. al. (1990) reported that lordosis behavior was shown to be attenuated. Presently, little is known about the role of the mZI in the expression of male rat sexual behavior, but several studies indicate that it plays no role. Anatomical studies, however, have revealed that neural connections exist between the mZI and the dMCG in both male and female rats. Collectively this information suggests that the neuronal pathways between the mZI and the dMCG would differ in strength between male and female rats. We addressed this possibility by using the retrograde tract tracing approach with Horseradish Peroxidase (HRP). A 12 % solution of HRP was injected bilaterally (volume, 5 ul/per side) into the dMCG. After a 3 day survival period, animals were sacrificed and their brains processed for HRP histochemistry using a modified method of Mesulam. The results of this comparison analysis will be reported.